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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/807,923

03/24/2004

Kimasaru Ura

91752

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24628

7590

03/05/2007

WELSH & KATZ, LTD
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CHICAGO, IL 60606

EXAMINER

CHAUDHRY, SAEED T

ART UNIT

PAPER NUMBER

1746

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/05/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/807,923

Applicant(s)

URA, KIMASARU

Examiner

Saeed T. Chaudhry

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. ____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3/24/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Applicant's preliminary amendments and remarks filed March 24, 2004 have been acknowledged by the examiner and entered. Claims 14-26 have been canceled and claims 1-13 are pending in this application for consideration. The references filed in 1449 with language different than English has not been considered because of non-English language.

Drawings

The drawings are objected to because in the specification character F1 on page 13 at line 3 is recited. This element is not present in the Figure 4. Reference characters mentioned in the description must appear in the drawings. See MPEP 608.02(O)5. Correction is required.

The drawings are objected to because the specification specify that the hole 10 is larger than the holes 11, 12, and 13 at page 10 in last paragraph. Figures 1 and 3 show same diameter of all the holes. Correction is required.

Claim Rejections - 35 USC § 112

Claims 2-4, 7-8 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 2 and 6 recite the limitation " $a < 13$ ". It is not clear what is meant by these terms, since these terms are not defined in the claims.

Claims 3, 4, 7 and 8 are confusing in the recitation of "respectively, are set at substantially 90 degrees" because it is not clear that total of both the angles are 90 degrees or one of the angle is 90 degree.

Claim 13 is confusing since it is not understood what is being claimed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) he has abandoned the invention.

(d) the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months before the filing of the application in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

(f) he did not himself invent the subject matter sought to be patented.

(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Masaru.

Masaru (4,687,011) discloses a method for cleaning drain pipe with a nozzle (6) connected to a hose (2) having a universal guide (43) linked to the front of the nozzle (6). High pressure water jetted obliquely rearward from the holes of the nozzle to propel the nozzle into the drain pipe and causing the hose to turn while the nozzle move spiral manner in the drain pipe. One of the hole is always in opposition to the inner surface of the drain pipe.

The cleaning of the drain pipe 46 is carried out by jetting the high-pressure water pressurized by the pump through the jet holes 8, 8a of the nozzle 6 mounted at the tip of the hose 2. The material adhered to the inside of the pipe is pulverized and removed by the high-pressure water jetted from the nozzle 6 in the aslant rearward direction of the nozzle 6, and at

Art Unit: 1746

the same time, the nozzle 6 advances in the pipe by the propulsion force of the high-pressure water jetted from the nozzle 6 and the drawing-out of the high-pressure hose 2 by the manual or an automatic operation. In the lateral pipe 46a, as shown in FIG. 5, when the high-pressure hose 2 is rotated in the pipe, the snake wire 11 abuts the inner wall of the pipe by the rotation of the hose 2, and the direction of the nozzle 6 is changed, and as a result, the direction of the propulsion force by the high-pressure jet force of the nozzle 6 is tilted relative to the lateral cross section of the pipe 46a, and the nozzle 6 is revolved spirally along the inner peripheral wall of the pipe by the change of direction of the propulsion force. In the vertical pipe 46b, the high-pressure hose 2 is rotated at a constant speed, and the nozzle 6 is revolved spirally in the inner wall of the pipe by the drawing-out of the high-pressure hose 2, and the jet water jetted through a plurality of jet holes 8, 8a of the nozzle 6 cleans the inner wall of the pipe evenly with efficiency.

As described in the foregoing, to rotate the nozzle spirally in the lateral pipe 46a, it becomes obvious that it can be achieved by changing the direction of the propulsion force of the nozzle 6 according to the rotation of the high-pressure hose 2. In this embodiment, as means for changing the direction of the propulsion force of the nozzle according to the rotation of the high-pressure hose, the construction of tilting the snake wire 11 for α degrees relative to the center axial line of the nozzle 6 is employed. If the foregoing α degrees is the zero degrees like the head of the conventional high-pressure hose, namely, the snake wire 11 and the center axial line of the nozzle 6 are on a straight line, the direction of the nozzle 6, namely, the direction of the propulsion force by the high-pressure jet water is not changed even if the high-pressure hose is rotated so that the nozzle 6 is not revolved spirally in the lateral pipe 46a.

Art Unit: 1746

The claimed process read on the Masaru process since the claimed process does not exclude that the universal guide has an angle with respect to the nozzle.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 9 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masaru in view of Shinzo.

Masaru was discussed supra. However, the reference fails to disclose that the certain injection hole has larger diameter than other holes.

Shinzo (JP-01-315379) disclose a nozzle having at least one large diameter hole than other injection holes to exert unbalance thrust on the nozzle to rotate inside the pipe.

High-pressure cleaning water passes through an inlet hole 4 from a cleaning hose 2, flows into a nozzle bearing 3, then passes through a shaft hole 11, and is injected from the injection holes 9a-9d. At this time, the nozzle 8 is rotated by the fluid energy caused by a vane 10 along with a nozzle guide member 12. In addition, unbalanced thrust for pressing the nozzle 8 on the

Art Unit: 1746

inner wall 1a of a pipe 1 is produced by the difference in the diameter between the injection hole 9a and the injection hole 9c. Accordingly, the force of fluid energy exerted on the vane 10 and the unbalanced thrust caused by the injection hole are concurrently exerted on the nozzle 8, and the nozzle 8 rotates, moves along the inner wall 1a, or turns. As a result, the nozzle 8 is rotated inseparably from the inner wall 1a of even a large-diameter pipe 1. The nozzle 8 is moved forward by the driving force, since the injection hole 9 is inclined toward the inner wall 1a (see abstract).

It would have been obvious at the time applicant invented the claimed process to incorporate the cited nozzle of Shinzo into the process of Masaru for purpose of thrusting the nozzle into the drain pipe in a spiral manner to avoid the streaking effect on the interior of the drain pipe. Further, it is well known in the art to use hot water for loosening the contaminated material from inside of the drain pipe. Therefore, one of ordinary skill in the art would use hot water to increase the cleaning efficiency.

Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masaru in view of Shinzo and Folts et al.

Masaru and Shinzo were discussed supra. However, the references fail to disclose different angles of the injection nozzles.

Folts et al (5,314,545) disclose a method for delivering high pressure velocity working liquid to an internal access opening for cleaning and removing thin cross section material. A nozzle having different angles with respect to the longitudinal axis of the nozzle.

It would have been obvious at the time applicant invented the claimed process to incorporate the cited nozzle of Folts et al into the process of Masaru to increase the area of the injection nozzle into drain pipe. Further, one of ordinary skill in the art would manipulate the

Art Unit: 1746

angles of the injection holes with routine experimentations for efficient removal of the material from inside of the drain pipe.

Claims 5-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Masaru in view of Shinzo, Folts et al and ^AIida et al.

Masaru, Shinzo and Folts et al were discussed supra. However, the references fail to use mixture of liquid and gas. Iida et al (5,408,991) discloses a method of cleaning a pipe with a mixture of liquid and gas. A cleaning scheme for supplying a cleaning solution such as tap water or a detergent in conduits to clean the conduits of the endoscope, a cleaning scheme for supplying a fluid mixture of a cleaning solution and a gas, i.e., a so-called two-phase (gaseous and liquid phases) flow is also known as a scheme for cleaning the conduits in the endoscope (see col. 3, lines 3-9).

It is well known in the art of cleaning the pipe to utilize mixture of air and water to increase the cleaning efficiency as disclosed by Iida et al. Therefore, it would have been obvious to include a mixture of water and air as disclosed by Iida et al into the process of Masaru to clean drain pipe and increase the cleaning efficiency.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saeed T. Chaudhry whose telephone number is (571) 272-1298. The examiner can normally be reached on Monday-Friday from 9:30 A.M. to 4:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Michael Barr, can be reached on (571)-272-1414. The fax phone number for non-final is (703)-872-9306.

When filing a FAX in Gp 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are for entry into the file of the application. This will expedite processing of your papers.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (571) 272-1700.

Art Unit: 1746

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Saeed T. Chaudhry
Patent Examiner

A handwritten signature in black ink, appearing to read "Michael Barr", with a stylized, elongated horizontal stroke at the end.

MICHAEL BARR
SUPERVISORY PATENT EXAMINER